

MIKULICIC, Damir

Rearrangement of the Astronomical Observatory of Popov Toranj. Zemlja
i svemir 6 no.4:75-76 '63.

MIKULICIC, Miroslav, inz.

Problems and necessity of specialization of the ship-machinery
engineers. Brodogradnja 5 no.5:226-230 '54.

MIKULICIC, Miroslav, inz.

The first ship diesel engine built in Yugoslavia. (Conclusion).
Brodogradnja 7 no.2:64-68 '56.

MIKULICIC, Miroslav, inz.

The main diesel engines of the MB "Takovo" and MB "Tuzla."
Brodogradnja 8 no.4:158-164, '57.

MIKULICIC, V.; WEBER, K.

Luminescence of luminols. XII. Inhibition of the chemofluorescence of luminols. In German. Croat chem acta 32 no.3:157-163 '60.
(KEAI 10:7)

1. Zavod za sudsku medicinu i kriminalistiku Medicinskog fakulteta u Zagrebu.

(Luminescence) (Aminodihydrophthalazinedione)
(Fluorescence)

MIKULICIC, Vanja, Dr.

Various aspects of modern dietetics. Med. glasn. 11 no.5:163-168
May 57.

1. Interna klinika Medicinskog fakulteta Sveucilista u Zagrebu
(Pretstojnik: prof dr a Hara).

(DIETS, ther. use
modern aspects (Ser))

KOVACIC, Nada, dr.; MIKULICIC, Vanja, dr.

Hyperparathyroidism without osseous changes. Lijec. vjes. 81
no. 7-8:503-505 '59.

1. Iz Interne klinike Medicinskog fakulteta u Zagrebu.
(PARATHYROID GLAND dis.)

MIKULICIC, Vanja, Dr.; KOVACIC, Nada, Dr.

Active insulomas of the pancreas. Presentation of 5 patients. Lijec
vjes 82 no.5:395-402 '60.

1. Iz Interne klinike Medicinskog Fakulteta u Zagrebu
(ISLET CELL TUMOR case reports)

MIKULICIC, Vanja, dr.

Treatment of emergency conditions in some endocrine diseases. Liječn.
vjesn. 84 no.11:1145-1153 '62.

1. Iz Interne klinike Medicinskog fakulteta u Zagrebu.
(THYROID CRISIS) (MYXEDEMA) (EMERGENCIES)
(ADRENAL CORTEX HYPOFUNCTION) (PITUITARY GLAND)

YUGOSLAVIA

MIKULICIC, Dr Vanja, and PROSENJAK, Prof Marija, Clinic of Internal Medicine (Interna Klinika), Faculty of Medicine (Medicinski Fakultet), University (Sveuciliste) of Zagreb.

"The Value of Hydrocortisone Determination in Tests of the Function of the Adrenal Glands."

Zagreb, Liječnicki Vjesnik, Vol 85, No 7, July 1963, pp 713-719.

Abstract: [Authors' English summary modified] Experience with the clinical interpretation of hydrocortisone values is reviewed. The normal values, varying between 6 and 16 gamma-%, are in line with those described by other authors. Variations in these values in cases of thyrotoxicosis during the day are discussed and compared with values in healthy persons. Besides basic values, those noted after first and second instances of subtotal adrenalectomy with the Cushing syndrome are listed. Cases of hypocorticism, mainly those of M. ADDISON [affiliation not given], are classified into categories according to basic values and the range of reaction to stimulation with ACTH. The practical significance of these findings in other clinical circumstances is discussed.

Twenty-three Western references of recent date.

1/1

- 1 -

MIKULICIC, Vanja, dr.; PROSENJAK, Marija, prof.

Value of hydrocortisone in function tests of the adrenal gland.
Liječn. vjesn. 85 no.7:713-719 '63.

1. Iz Interne klinike Medicinskog fakulteta Sveučilišta u
Zagrebu.

(HYDROCORTISONE) (ADRENAL CORTEX FUNCTION TESTS)
(ADDISON'S DISEASE) (CUSHING'S SYNDROME)
(CORTICOTROPIN)

S

MIKULICIC, Visnja, ing; ~~FINDE~~, Ana, ing.; FILAJDIC, M. dr. ing.

Loss of the content of thiamine during the technological process in the production of cookies. Kem ind 9 no.12:301-306 D '60.

1. Zavod za analitiku, zivotnih namirnica Tehnoloskog fakulteta Sveucilista, Zagreb.

YUGOSLAVIA

Dr. ~~Vlasta MIKULICIC~~ and Dr I. SIMONOVIC, Internal Medicine Clinic of
Medical Faculty (Interna Klinika Medicinskog fakulteta) Head
(Predstojnik) Prof Dr A. HAHN, Zagreb.

"Radio-Chromatography of Thyroid Hormones."

Belgrade, Medicinski Glasnik, Vol 17, No 3-4, Mar-Apr 63; pp 120-125.

Abstract : Precise technical data on procedure used by authors in
preparing standard solutions, hormone extraction, choice of solvent,
dye-spraying or custom-made autoradiography procedure for development;
identification of spots. Two chromatograms, 2 autoradiograms,
graphs juxtaposing spectrophotometric and chromatographic patterns;
2 photographs of device; 23 Western references.

1/1

MIKULICIC, Vital, inz.

The most recent products in the field of ship paints at the Chromos
Plant of Zagreb. Brodogradnja 7 no.2:89-91 '56.

S/081/63/000/002/020/088
B166/B138

AUTHORS: Mikulić, Vital, Weber Karl
TITLE: The use of photographic materials in emission spectroscopy
PERIODICAL: Referativnyy zhurnal. Khimiya, no. 2, 1963, 145, abstract
2D1 (Glasnik khem. drusht. Beograd, v. 25-26, nos. 3-4,
1960-1961, 193-196 [Serbo-Croat; summary in Ger.])

TEXT: On the basis of photographs of spectra taken in the 560, 401 and
240 mμ regions under strictly identical conditions on different photographic
materials, it was concluded that these materials are suitable for
emission spectroscopy. The role of optical sensitization of the
photographic layers is discussed. Negative cinefilm is advised for
spectral analysis. [Abstracter's note: Complete translation.]

Card 1/1

MIKULICIC, Vital,;WEBER, Karlo

Use of photomaterials in the emission spectrum analysis.
Glas Hem dr 25/26 no.3/4:193-196 '60/'61

1. Medicinski fakultet, Zavod za sudsku medicinu i kriminalistiku,
Zagreb.

Mikulickova, J.

Mikulickova, J. More attention must be paid to the growing generation of bricklayers. p. 62.

Vol. 35, no. 2, Feb. 1957

STAVIVO

TECHNOLOGY

Czechoslovakia

So. East European Accessions, Vol. 6, May 1957
No. 5

Z/012/63/000/002/001/002
E112/E535

AUTHORS: Jirkovský V. and Mikulíčková J.

TITLE: Testing of vacuum-tight, solderable metal layers on ceramic objects

PERIODICAL: Silikaty, no.2, 1963, 139-149

TEXT: A method is described for determining the metal to ceramic bond strength of coatings. The purpose is to arrive at quantitative criteria for assessing to what extent other metals could be soldered on to these surfaces. Ceramic test specimens of high corundum content and annular shape were treated at elevated temperatures with dilute $\text{HNO}_3:\text{HCl}$, washed with NH_4OH , and distilled water and heated in an oxidizing atmosphere to $900-1000^\circ\text{C}$. A novel coating composition which does not require extremely high-temperature furnaces was developed (Czechoslovak Patent No.90551), consisting of a collodion-amyl acetate suspension of powdered molybdenum, ferrosilicon and lithium fluoride. After coating, the test specimens were fired in a reducing atmosphere of 2 parts H_2 : 1 part N_2 at 1200°C . The thickness and conductivity of the metal layer were then determined.
Card 1/2

Testing of vacuum-tight ...

Z/012/63/000/002/001/002
E112/E535

The primary coating was provided with a nickel layer by electroplating. Two coated test specimens were joined together by means of an Ag-Cu solder. The strength of the bond was determined quantitatively by bending tests on the Schopper machine. The effects of the following experimental factors on bond strength were studied: 1) Thickness of primary metal coating; 2) Temperature of firing; 3) Length of firing; 4) Thickness of nickel layer; 5) Temperature of heating nickel layer. The effects of heating conditions and layer thickness on electrical conductivity were also determined. Optimum conditions were: thickness of primary layer: 6 mg/cm^2 ; firing in $\text{H}_2:\text{H}_2$ 1:1, at $1230 \pm 30^\circ\text{C}$, 17 min; electroplating with nickel, using $35\% \pm 20\%$ on weight of primary coating; nickel-coating heated in H_2 -atmosphere at $700^\circ\text{C} \pm 100^\circ\text{C}$ for 20 min. There are 11 figures and 1 table.

ASSOCIATION: Výzkumný ústav pro vakuovou elektrotechniku, Praha
(Vacuum Electrical Engineering Research Institute,
Prague)

SUBMITTED: July 7, 1962
Card 2/2

MIKULIK, Ivan, velitel letadea IL-18; VARTEK, Eduard, velitel letadea IL-18;
STRAZNIK, Roman, starsi navigator; KRJUKOV, Alexandr, pilot-instruktor

Analysis of flights. Letecky obzor 6 no.4:98-102 Ap '62.

MIKULIK, Ivan, komandir korablya

Taxying, take-off, gain in altitude; what should an airline captain
keep in mind; circumspection and once circumspection. Grazhd.av.
18 no.12:5-6 D '61. (MIRA 5:1)

(Airplanes--Take-off)

MIKULIK, J.

"A faster method for drying folder."

p. 159 (VEDECKE PRACE. Vol. 1, 1957, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 7, 1958

NIKULIK, J.

A system of machines for harvesting fodder. p. 344. (VESTNIK, Vol. 4, No. 7/8, 1957, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 12, Dec 1957. Un

MIKULIK, J.

"Batch meter for chemically coated molding sand." p. 59.

"Modern forming machines from the German Democratic Republic." p. 60.

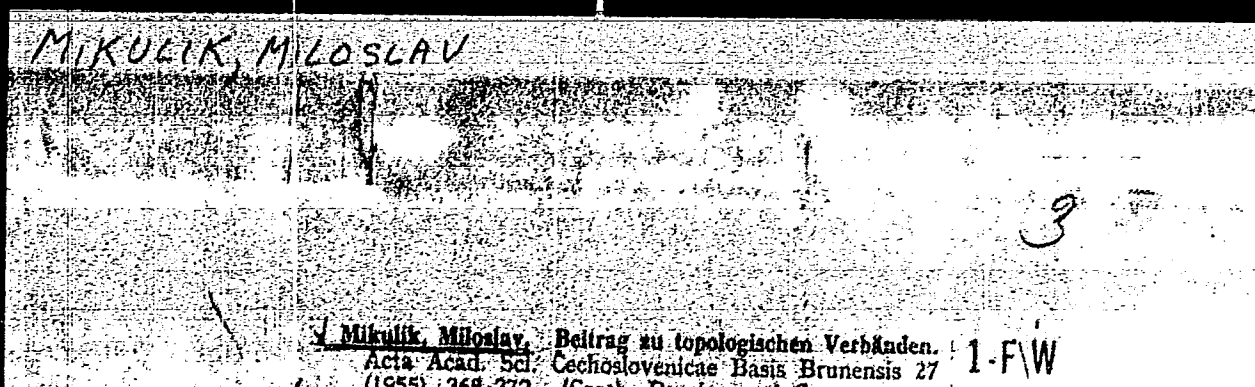
SLEVARENSTVI. (MINISTERSTVO TEZKEHO STROJIRENSTVI A CESKOSLOVENSKA VEDECKA
TECHNICKA SPOLECNOST PRO HUTNICTVI A SLEVARENSTVI). Praha, Czechoslovakia,
Vol. 7, no. 2, Feb. 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959.
Uncl.

MIKULIK, Jan, ing.

Basic problems and prospects of complex mechanization of forage harvesting. Zemedel tech 9 no.3:193-200 Je '63.

1. Vyzkumny ustav zemedelske techniky, Hepy u iravy.



L 25181-65

ACCESSION NR: AF5025933

CZ/0017/65/054/005/0234/

AUTHOR: Brazda, Miroslav (Engineer); Frojtich, Zdenek (Engineer); Mikulik, Miloslav (Doctor)

TITLE: Programming Method for the Evaluation of Electrical Machines Using Standard Blocks²⁹

SOURCE: Elektrotechnicky obzor, Vol 54, Nr 5, 1965, pp 234-240

ABSTRACT: (Authors' Russian and English summaries, modified): The article describes an easy method of setting up evaluation programs for rotary electrical machines using the standard blocks method. The procedure is illustrated on the example of a block design and evaluation of an M-shaped stator slot which is in turn employed in the evaluation program for a double-squirrel cage 6000 V induction motor, and in a simplified manner in the check-out program for the same motor. Orig. art. has: 6 figures.

ASSOCIATION: Vyzkumny a vyvojovy ustav elektrickych stroju todivych, Brno (Research and Development Institute of Rotary Electrical Machinery)

MIKULIN

A. A.

COUNTRY : USSR.
 CATEGORY : Zoological Parasitology. Acarids and Insects as Disease Vectors. Insects.
 ABS. JOUR. : RZhBiol., No. 14, 1958, No. 62677.
 AUTHORS : Zagniborodova, Ye.N.; Mikulin, A. A.
 INST. : Central-Asian Scientific Research Anti-Plague
 TITLE : Materials Towards the Fauna of Central-Asian Fleas. Communication No. 4. New Forms of Fleas from Turkmenia.
 ORIG. PUB. : Tr. Sredne-Aziatsk. n.-1. protivochumn. in-ta, 1956, vyp. 2. 143-146.
 ABSTRACT : Descriptions of Coratophyllus (Nasopsyllus) philippovi sp. n. and Ophthalmosylla volgensis transcaspiica sp. n. and drawings of the abdomen's modified segments in females and males of the described forms.

CARD: 1/1

MIKULIN, A. A.

Mikulín, A. A. - "Jet propulsion engineering," In the symposium: Sovr. problemy nauki i tekhniki, Moscow, 1949, p. 94-115

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statay, No. 15, 1949.)

157740

USSR/Engineering - Literature
Mechanics

Dec 49

"Review of I. I. Artobolevsky's Book, 'Mechanisms', Acad A. A. Mikulin, Prof L. B. Levenson, Docent G. A. Barsov, 2 pp

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 12

Book is second edition of Part I (published 1948 by Acad Sci USSR, 886 pp, 1,064 ill) of a large monograph-handbook for engineers, designers and inventors. Includes schematic drawings and descriptions of 1,064 mechanisms (lever, gear, cam,

157740

USSR/Engineering - Literature
(Contd)

Dec 49

etc.) and is highly evaluated by reviewers. Whole edition is to be in 4 volumes, and second volume is already published.

MIKULIN, A. A.

157740

MIKULIN, A.A.; ZAGRYAZKIN, N.N.

Experimental water-cooled combustion chamber. Trudy Lab.dvig. no.5:27-
33 '60. (MIRA 14:3)

(Gas and oil engines)

MIKULIN, A., akademik, Geroy Sotsialisticheskogo Truda

Future of the gas turbine. Starsh.-serzh. no.2:22 F '61.

(MIRA 14:7)

(Gas turbines)

L 000000-07 EWP(m)/EWP(j) IJP(c) RM
ACC NR: ARG033328 (A) SOURCE CODE: UR/0081/66/000/014/S083/S083

AUTHOR: Ostryakov, I. A.; Mikulin, A. A.; Katusova, V. K.; Bykov, A. S.

TITLE: New rectifying properties of electroconductive and semiconductive
polymer materials

SOURCE: Ref. zh. Khimiya, Part II, Abs. 14S580

REF SOURCE: Nauchno-issled. tr. Vses. n.-i. in-t plenok i iskusstv. kozhi,
sb. 16, 1965, 132.135

TOPIC TAGS: semiconducting polymer, electric conductivity, electric field,
pressure measuring instrument, rectification

ABSTRACT: Electroconductive polymers exhibit rectifying properties, depending
on the pressure of the aluminum contact. For test purposes, film samples
50 x 10 x 1 mm were used consisting of (parts by weight): 100 acetylene black,
33 SKN-40, 33 PVKh, 33 PA, and 1 stearic acid. The electric conductivity of the
films increased by increasing the pressure. It is noted that the rectifying proper-
ties of film samples increase by decreasing the contact pressure. A method has
been developed for changing the temperature coefficient of resistance and other

Card 1/2

L 09432-67

ACC NR: AR6033328

electrical parameters of current-conducting polymer materials by the interaction with an electric field. This makes it possible to increase the accuracy of readings of the polymer pressure-measuring instruments^{1,2} and other products of current-conducting polymer materials. L. Yamanova. [Translation of abstract]

SUB CODE: 11/

Card 2/2

MIKULIN, Boris Pavlovich; SHVARKOV, P.M.; GNEZDILOV, V.B., red.;
red.; YEZDOKOVA, M.L., red. izd-va; ISLENT'YEVA, P.G., tekhn.
red.

[Surveying designing, and planning of industrial railroads] Izy-
skaniia i proektirovanie zheleznnykh dorog promyshlennykh pred-
priatii. Moskva, Metallurgizdat, 1962. 271 p. (MIRA 15:12)
(Railroads, Industrial--Construction)

SESLIVANOV, Yu.P.; KARPENKO, E.S.; MIKULIN, E.V.

New method of logarithmic conversion in densitometers with
direct reading. Zhur.nauch.i prikl.fot.i kin. 7 no.6:447-453
N-D '62. (MIRA 15:12)

1. Moskovskiy poligraficheskiy institut i Ukrainskiy nauchno-
issledovatel'skiy institut poligraficheskoy promyshlennosti.
(Densitometers)

107 AND 108 SERIES		PROCESSING AND PROPERTIES INDEX		109 AND 110 SERIES	
<p>Calculating the specific gravity and heat capacity of high-purity elements. O. L. Anderson. J. Chem. Ind. (U. S. S. R.) 10, No. 10, 10-22(1941).—Equations are derived that permit using three values for various salt mixtures. H. M. Leicester</p>					
<p>ASS-644 METALLURGICAL LITERATURE CLASSIFICATION</p>					
FROM SYNOPTIC		FROM INDEX		FROM INDEX	
107000 00		107000 00		107000 00	

117 AND 118 ORDER										100 AND 4TH ORDER									
PROCESSES AND PROPERTIES MOD																			
CA		<p>Recovery of ammonia from the mother liquor in the ammonia-soda process. G. I. Milkina, U.S.S.R. 64, 478, April 30, 1945. The condensate formed in the cooler of the preheater is sep'd. from the main stream of the filter liquid and dist'd. without using lime water. Thus the vol. of liquid passing through the preheater, prelimer, and distiller per ton of soda, and the losses of CaO and CO₂ are decreased by 10-15%. M. Hosen</p>																	
18																			
ASB-15A METALLURGICAL LITERATURE CLASSIFICATION																			
100000 117 118 119										100000 117 118 119									
100000 117 118 119										100000 117 118 119									

1ST AND 2ND COLUMNS		PROCEDURES AND PROPERTIES INDEX		3RD AND 4TH COLUMNS	
CA		<p>Processing the mother liquor in soda production by the Solvay process. G. I. Mikulin—U.S.S.R. 65,852, Feb. 28, 1946. The low-quality NaHCO_3 ppt. obtained in the 2nd stage of the process from the mother liquor is recrystd. in a fresh ammonia-salt brine subsequently used for carbonation. The reppd. NaHCO_3 is now ready for calcination. M. Hosh</p>			
ASACSLA METALLURGICAL LITERATURE CLASSIFICATION					
EDSON SYSTEM		EDSON SYSTEM		EDSON SYSTEM	
EDSON SYSTEM		EDSON SYSTEM		EDSON SYSTEM	

1ST AND 2ND COLUMNS		3RD AND 4TH COLUMNS	
PROCESSING AND PROPERTIES INDEX			
CA	Ammonium chloride. G. I. Mikhailov. U.S.S.R. 66,247, May 31, 1946. Ammonia-soda liquor is completely acid. with NH_3 . NaCl is added in excess of the quantity required to react the liquor with NH_3 and with NaCl , the liquor is heated to dissolve pptd. NH_4Cl and filtered. From the filtrate NH_4Cl is sepd. in the usual manner.	18	
ASSOCIATE METALLURGICAL LITERATURE CLASSIFICATION		SIGN CONING	
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SIGNATURE		SIGNATURE	

I, II, AND III, ORDER										PROCESS AND PROPERTIES INDEX										IV, V, AND VI, ORDER									
<div style="display: flex; justify-content: space-between;"> CA 18 </div> <p>Treating weak soda liquors. G. I. Mikhailin. U.S.S.R. 67,866, Oct. 31, 1946. Hot weak liquors in the Solvay process are used to wash the carbonization columns and to ext. dry soda adhering to the walls of the driers. This liquor can be recirculated several times so as to increase its concn. M. Horsch</p> <p>450-55A METALLURGICAL LITERATURE CLASSIFICATION</p>																													
GROUPS										SUBGROUPS										SUBSUBGROUPS									
GROUPS										SUBGROUPS										SUBSUBGROUPS									

MIKULIN, G. I.

Mikulín, G. I. - "Some problems of the theory of the ammonia-soda process", Trudy Vsesoyuz. in-ta sodovoy prom-sti, Vol. V, 1949, p. 13-62, - Bibliog: 16 items.

So: U-4631, 16 Sept. 53 (Letopis 'Zhurnal 'nykh Statoy, No. 24, 1949).

MIKULIN, G. I.

Additive properties of mixed solutions of salts. G. I. Mikulin. Ukrain. Khim. Zhur. 20, 602-614 (1964) (in Russ.)
 Molar energy of interaction of ions in concd. aq. solns. of AgNO_3 , KNO_3 , RbNO_3 , and CaNO_3 is related linearly to \sqrt{C} , C = vol. concn. of the electrolyte in g. mol./l. soln. Apparent deviations from this relation of most strong electrolytes is ascribed to the formation in soln. of liquid hydrates of ions of various stoichiometric compn. that are capable of dissociation. Based on the principles of the hydrate theory of solns. by Mendeleev, formulas for thermodynamic potential and for other properties of binary and mixed concd. aq. solns. of electrolytes are offered. Solv. diagrams at 25° of salts in ternary solns. ($\text{KCl} + \text{NaCl} + \text{H}_2\text{O}$, $\text{NaCl} + \text{NaNO}_3 + \text{H}_2\text{O}$, $\text{NaNO}_3 + \text{KNO}_3 + \text{H}_2\text{O}$, and $\text{KNO}_3 + \text{KCl} + \text{H}_2\text{O}$) are calcd. from numerical values of constants obtained for binary aq. solns. of KCl , NaCl , NaNO_3 , and KNO_3 ; these calcd. diagrams agree well with exptl. data. Cf. Stokes, C.A. 42, 62115, 66986.
 Elizabeth Barabash

MIKULIN, G. I.

USSR/Chemistry - Chemical engineering

FD-1

Card 1/1 : Pub. 50-9/18

Author : Mikulin, G. I.

Title : Hydraulic calculations pertaining to bubble-cap columns

Periodical : Khim. prom., No 1, 43-46, Jan-Feb 1955

Abstract : Derives formulas and draws up procedures for hydrodynamic calculation pertaining to the gas and liquid flow in bubble-cap distillation and absorption columns. Five references, all USSR, all since 1940. Two figures, 5 graphs, one table.

Institution : Donets Order of Lenin Soda Plant imeni V. I. Lenin

MIKULIN, G.I.

Electrostatic theory of concentrated electrolyte solutions. Part 1.
New method for the solution of the fundamental equation of the
Debye-Hückel theory. Ukr. khim.zhur. 21 no.4:435-448 '55. (MLBA 9:2)

1. Denetskiy zedovyy saved "Densoda" imeni V.I. Lenina.
(Solution (Chemistry)) (Electrolytes)

MIKULIN, Georgiy Iosifovich; POLYAKOV, Ippolit Konstantinovich; KOPYLEV, B.A.
redaktor; ERLIKH, Ye.Ya., tekhnicheskiy redaktor

[Distillation in the production of soda] Destillatsiya v proizvod-
stve sody. Leningrad, Gos. nauchno-tekhn. izd-vo khim. lit-ry,
1956. 347 p. (MLRA 9:11)
(Soda industry) (Distillation, Destructive)

MIKULIN, G. I.

The electrostatic theory of concentrated solutions of electrolytes. II. A theory that takes into account the decrease in the dielectric constant of the solvent near the ions. G. I. Mikulin. *Ukrain. Khim. Zhur.* 22, 295-308 (1960); *ibid.* 36, 8153a. — The method developed earlier [loc. cit.] for solving the Debye-Hückel equations was used to develop an electrostatic theory of solns. that takes into consideration the decrease in the dielec. const. of the solvent in the area surrounding an ion as well as the formation of an "ionic atm." Methods are developed for solving the basic differential equation of this theory as well as a method for calcg. the elec. components of the thermodynamic potential of a soln. of a binary, sym. electrolyte. J. R. Leach

MIKULIN, G. I.

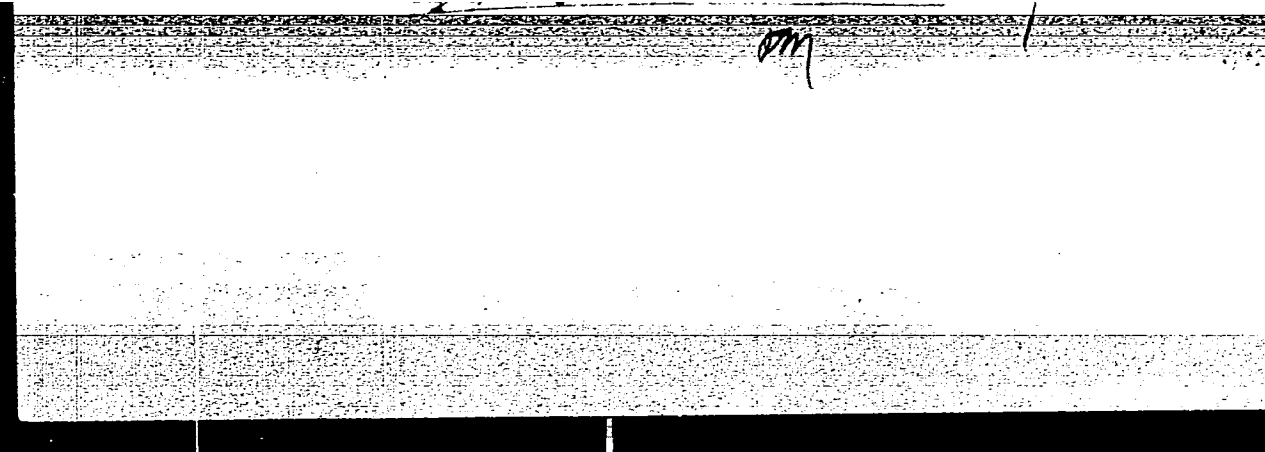
Distr: 4243

✓ Capped plates for identification separation.

sent to G. I. Mikulin, V. P. Nikulin, and M. P. Chelish.

"APPROVED FOR RELEASE: 07/12/2001

CIA-RDP86-00513R001134210014-4



APPROVED FOR RELEASE: 07/12/2001

CIA-RDP86-00513R001134210014-4"

66853

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SOV/76-33-11-7/47

5(4)

AUTHOR: Mikulin, G. I.

TITLE: The Effect of Dielectric Saturation of Solvents in the Electrostatic Theory of Solutions

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 11, pp 2419-2423 (USSR)

ABSTRACT: An electrostatic theory for electrolytic solutions, in which the decrease of the dielectric constant of the solvent in the electric field near the ion was taken into consideration, and determination of the real value of this correction for the Debye-Hückel theory were developed. It is shown that the theoretical curves of the dependence of the thermodynamic solution potential on the concentration (derived according to the electrostatic theory of solutions) can only be compared to the experimental data of aqueous electrolytic solutions (for example KNO_3 , AgNO_3 etc) having ions which do not form liquid hydrates of a certain stoichiometric composition. The author presents a comparison between theoretical and experimental curves of the dependence of the "excess" thermodynamic potential

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SOV/76-33-11-7/47

The Effect of Dielectric Saturation of Solvents in the Electrostatic Theory of Solutions

of aqueous AgNO_3 solutions at 25°C on the solution concentration (figure 2 according to the Debye-Hückel theory in consideration of dielectric water saturation according to the Debye formula or the Onsager-Odelevskiy formula and experimental data). It was found that in electrolytes whose ions do not form liquid hydrates, the electrostatic interaction between ions and water molecule polarization may be regarded as the main factor which determines the dependence of the thermodynamic properties of concentrated solutions on the concentration. The course of the theoretical curve considerably depends on the function $\epsilon = f(E)$, the decrease of the dielectric constant of water in a strong electric field, which formed the basis of computation. The curve plotted on the basis of experimental data runs somewhere between the curves resulting from the polarization theory of Onsager and the old Debye theory. In the general theory of concentrated aqueous solutions of strong electrolytes, the polarization of molecules near the ions and the chemical ion hydration must be taken into account. Theories neglecting these factors (or one of them) are not valid. There are 2 figures and

Card 2/3

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SOV/76-33-11-7/47

The Effect of Dielectric Saturation of Solvents in the Electrostatic Theory
of Solutions

5 Soviet references.

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Card 3/3

5. 4/20

5(4)

66854

SOV/76-33-11-8/47

AUTHOR: Mikulín, G. I.TITLE: Thermodynamic Interpretation of the Hydrate Theory of Electrolyte Solutions

PERIODICAL: Zhurnal fizicheskoy khimii, 1959, Vol 33, Nr 11, pp 2424-2428 (USSR)

ABSTRACT: Starting from D. I. Mendeleyev's definition (Ref 1) who regards solutions as "liquid, unstable chemical compounds in dissociated state", an equation for the thermodynamic potential of concentrated solutions of a strong electrolyte is derived:
 $Z = \phi_0 + RT \ln \phi_1 + \phi_2$ (ϕ_0 denotes the properties of the solvent and the ions of the electrolyte in an infinitely dilute solution; ϕ_1 - entropy variation by mixing different particles (which form the solution) during their dissociation or association and in the formation of new types of particles of certain chemical compounds in the solution; ϕ_2 is determined by the nature and magnitude of physical interaction between the particles of the solution). On the assumption that liquid ionic hydrates of varying stoichiometric composition, which may dissociate, are formed in the electrolytic solution, ϕ_1 was derived

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SOV/76-33-11-8/47

Thermodynamic Interpretation of the Hydrate Theory of Electrolyte Solutions

for various cases. Furthermore, equations of the law of mass action were written down which allow to calculate the instability constant of liquid hydrates. By analysis and generalization of the experimental data on the thermodynamic properties of concentrated aqueous electrolytic solutions it is shown that for such solutions ϕ_2 is linearly dependent on \sqrt{C} and may be represented by $\phi_2 = -NRT(a+b\sqrt{C})$. Using the equations derived, the author calculated the hydrate numbers, the instability constants of liquid hydrates, and the constants a and b for several electrolytes at 25°. Some ions such as K^+ , Rb^+ , Cs^+ , Ag^+ , NO_3^- , and $H_2PO_4^-$ do not form liquid hydrates as definite chemical compounds. Ions such as H_3O^+ , Na^+ , Li^+ , Cl^- , Br^- , and J^- form liquid hydrates with four water molecules which are only partly (10-20%) dissociated. To check the equations proposed, the latter were generalized for mixed solutions, and the curves for the joint solubility of two salts with a common ion, which are dissolved in water, were calculated from experimental data on the activity coefficients of aqueous solutions of each of the two salts. Good quantitative agreement

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66004

SOV/76-33-11-8/47

Thermodynamic Interpretation of the Hydrate Theory of Electrolyte Solutions

can be obtained for many salt pairs from calculated and experimental curves of the ternary system diagram. There are 1 figure and 4 Soviet references. 4

Card 3/3

SHANIN, S.A.; BALABAY, F.I.; KONONENKO, D.F.; MIKULIN, G.I. [Mykulin, H.I.];
BOROVSKAYA, N.V. [Borova'ka, N.V.]; SHINKEVICH, A.P. [Shynkevych, A.P.]
LIBERZON, L.M.; AMELIN, A.G. [Amelin, A.H.]; BURYAK, K.A.; PECHONKIN,
V.V. [Plechonkin, V.V.]; YATSENKO, N.N.; GAL'PERIN, N.I. [Hal'perin,
N.I.]; PEBALK, V.L.; CHEKHOMOV, Yu.K.

Inventions and improvements; certificates of inventions. Khim.prom.
[Ukr.] no.2:62-64 Ap-Je '65. (MIRA 18:6)

DUNSKYY, V.F.; YEVDOKHMOV, I.F.; KRASIL'NIKOV, V.M.; MEKULIN, K.F.; YUZHNIY, Z.M

Settling of a coarsely dispersed aerosol from the surface layer
of the atmosphere onto the underlying surface of the earth. Trudy
GGO no.172:192-204 '65. (MIRA 18:8)

IOFF, I.G.; GERSHKOVICH, N.I.; ZACHIBORODOVA, Ye.N.; LABUNETS, N.F.;
LEBNOV, A.D.; MIKULIN, M.A.; SKALON, O.I.; TIFLOV, V.Ye.; SHVARTS, Ye.A.
YURKINA, V.I.; YAKOBLENIS, I.M.

New species of fleas (Suctoria-Aphaniptera); third report. Med.paras.1
paras.bol. no.5:460-465 S-O '53. (MLRA 6:1
(Fleas)

Mikulin, M.A.

• USSR /Zooparasitology - Mites and Insects -
Disease Vectors

G-4

Abs Jour: Referat.Zh.Biol. No. 1, 1958, 874

Author : Mikulin, M.A.

Title : Organizational and Methodological Principles of
Calculating the Number of Rodent Ectoparasites

Orig Pub: Tr. Sredne-Aziatsk. n.-1. protivochumn. in-ta,
1956, No. 2, 3-7

Abstract: The best way of calculating the number of rodent
ectoparasites is a correlation of year-round ob-
servations on permanent stations with a thorough
single investigation of the whole territory. The
single investigation must be carried out by a
specific method for the ectoparasite collection to
yield both material for bacteriological investiga-
tions and data for calculation; this makes the

Card 1/2

MIKULIN, M.A.

USSR/Entomology - Acarines and Insect-Vectors of Disease
Pathogens.

G-2

Abs Jour : Ref Zhur - Entom., No 5, 1958, 19647

Author : Mikulin, M.A.

Inst :

Title : Data on Flea Fauna of Middle Asia. Communication I.
New Fleas From Kazakhstan and Middle Asia.

Orig Pub : Tr. Sredne-Aziatsk. n.-i. protivochumn, in-za, 1956,
No 2, 79-93

Abstract : A description and drawings of new flea forms (brief descriptions of some of these were published without drawings): *Ornithophaga* gen. n. with one specimen, *C. and-mala* sp. n. (only the female is known, removed from a 3-toed woodpecker from Ketmen ridge), *Ceratophyllus* (*Callopsylla*) *fragilis*, Mikulin, 1953 (from a *Sorex* field mouse and narrow-skull field mouse, Northern Balkhash region), *C. (Citellophilus) gracilis* sp. n. (from

Card 1/2

(Acarines): Tr. Sredne-Aziatsk. n.-i. protivochumn, in-za, 1956, No 2, 79-93

Parasitology - Acarines and Insect-Parasites of the Gerbil
Pathogen.

No. 500 : Gerbil - 1955, No 5, 1955, 1955

(2 species). 4 sections were distinguished: I - sand of Tan-Kum sands, II ancient Ili desert, III sand of Ishik-stan sands, IV deserts of the lower reaches of the River. Sections with similar soil and geobotanical environments (I and III, II and IV) have similar faunistic flea complexes. Close species of *Xenopsylla gerbilis* and *X. skrjabini*, on the distribution of which the author bases his districting, are mutually representative; the first is distributed in alluvial lacustrine [] deserts, the second in unbroken massifs of continental sands. The author explains the distribution of these two species by the process of landscape formation influenced by variations in the flow of the Ili River, and the history of migration of large gerbils.

Card 2/2

of 40 species and subspecies. Geographical groups are distinguished and list of fleas are given found on pika, marmots, jerboa, gerbils, mouse-like rodents, and other animals indicating specific parasitism.

PIKULIN, N.N.

USSR/Entomology - Acarina and Insect-Pathogens of Disease
Pathogens.

0-0

Abstr Jour : Def Jour - Jan., H. 5, 1958, 1959

Author : Pikulin, N.N.

Instr :

Title : Characterization of the Genus *Microgaster* D. et S.

Orig Pub : Tr. Vsesoyuzn. nauch. issled. inst. zhivotn. in-va, 1958, 51-52

Abstract : In collections from Zhukovskiy Station, containing many Acarid specimens which do not differ from typical *Microgaster* (*Microgaster*) in type, 1940, 1941, specimens on which absolutely no difference from *Microgaster* (*Microgaster*) ventral at H. 1, 1940, there are those that show intermediate between these two forms (drawings are given). The conclusion that the second form should be correctly considered as *Microgaster* and that it should be placed in the *Microgaster* (*Microgaster*) group.

Card 1/1

MIKULIN, M.A.

~~Carl Jordan~~; obituary. Med.paraz. 1 paraz.bol. 28 no.3:382
My-Je '59. (MIRA 12:9)

(JORDAN, CARL, 1861-1959)

MIKULIN, N.V., inzh. (st.Lobnya, Severnaya doroga)

Rectifying unit used for the superstructure of rapid-
acting switches. Elek. i tepl. tiaga 2 no.8:25-26 Ag '58.

(MIRA 11:9)

(Electric railroads--Switches) (Electric current rectifiers)

MIKULIN, P.^{S.} inzh.

Safety roller for the RTU-30 conveyer drive. Bezop.truda v
prom. 3 no.4:30 Ap '59. (MIRA 12:6)
(Conveying machinery)

MIKULIN, P.S., inzh.

Unremovable cage gates. Bezop.truda v prom. 3 no.8:35 kg '59.

(MIRA 12:11)

(Mine hoisting)

9

The use of naturally alloyed cast iron in the casting of piston rings. S. A. Mikulin, N. N. Morozov and L. P. Trufin. *Letsinoe Delo* 10, No. 4, 37-40(1939); Chem. Zvesti. 1940, 1, 121.--Piston rings contg. Cr and Ni were produced by the addn. of naturally alloyed Fe (10-15%) to the unalloyed cast iron. The alloying elements improved the ground structure (sorbite-like pearlite and finely divided graphite) and rendered the fine structure and hardness more uniform throughout the cross section of the piston ring. The hardness of the ring was increased by 1-2 Rockwell units. In spite of this fact, the metal was more readily worked. In the mixing of various kinds of cast iron the ratios expressed in the following equation should be maintained in order to produce rings of the best quality: $(2\% \text{ Si} + \% \text{ Ni}) / (1.5\% \text{ Cr} + \% \text{ Mn}) = 8-10$. The addn. of ferroilikon in the casting ladle was of no value. No change was made in the smelting process by reason of the addn. of the natural alloyed cast iron. M. G. M.

13

177. **Quality Control of Cast Iron for Piston Rings, S. Mikulin, 8 pages. From Zavodskaya Laboratoriya, v. 10, 1941, p. 199-201. Henry Brutcher, Altadena, Calif. (Translation No. 1479.)**

Gives details of a simple method for routine testing of cast irons for their tendency to chill, using a spiral casting. Includes experimental data and a metallographic study of a test spiral.

(See also Abot. Num. 44, 542)

PROCESS AND PROPERTIES INDEX	
CA	<p>Determination of phosphorus in steel or pig iron without the use of nitric acid. S. A. Mihulin. <i>Zavodskaya Lab.</i> 11, 308(1945).--The procedure described is essentially that of J. O. Handy (<i>Chem. News</i> 66, 324(1902)) except that in place of 100 ml. of HNO_3, sp. gr. 1.135, 15 ml. of a mixt. of 300 g. NH_4NO_3, 100 ml. concd. H_2SO_4, and 250 ml. of water are used. W. R. Henn</p>
7	
ASD-55A METALLURGICAL LITERATURE CLASSIFICATION	
10000 STUDIES	100000 WIP ONLY
100000 STUDIES	1000000 WIP ONLY

MIKULIN, S.A.; KOLESHCHENKO, A.G.; BAYDAK, G.A.

Desulfuration of cast iron in ring founding. Idt. proizv.
no.9:42 S '60. (MIRA 13:9)
(Iron founding) (Desulfuration)

MIKULIN, S.A.

Drawing flat-back patterns with the help of a dowel-pin mechanism.
Lit. proizv. no. 11:40-41 N '61. (MIRA 14:10)
(Patternmaking)

MIKULIN, S.A.

Stacked casting of iron frying pans. Lit.proizv. no.7:41 J1 '62.
(MIRA 16:2)

(Founding)

MAKULIN, T. G.

USSR/Diseases of Farm Animals. Diseases Caused by Helminths

R

Abstr Jour : Ref Zhur - Biol., No 19, 1958, No 88260

Author : Lazovskiy I.V., MAKULIN T.G.

Inst : Vitebsk Veterinary Institute

Title : Summarizing Experimental Dicyocaulosis [Langworm Infection]
Control in Cattle

Orig Pub : Uch. zap. Vitebskogo vet. in-ta, 1956, 14, No 1, 39-44

Abstract : Methods and results of measures in controlling dicyocaulosis in calves on 27 farms situated in various regions of the Vitebskaya Oblast are described here. As a basis for such control, isolated raising of calves born during the current year was practiced. On these farms, every 2 months control coprological and clinical examinations were conducted. Calves which were discovered to be dicyocaulosis carriers were subjected to isolation and to treatment. A great deal of attention was paid to improve the care, keeping, and feeding of calves. On endangered farms, as well as on farms

Card : 1/2

MIKULIN, V.; EYSYMONT, L., red.; MATISSEN, Z., tekhn. red.

[First book on photography; handbook for beginners] Pervaya kniga po fotografii; posobie dlia nachinaiusbchikh. Izd. 8., perer. Moskva, Goskinoizdat, 1950. 149 p.

(MIRA 15:3)

(Photography)

MIKULIN, Viktor Petrovich; ZHERDETSKAYA, N.N., redaktor; VORONTSOVA, Z.V.,
tekhnicheskii redaktor

[25 lessons in photography; practical manual] 25 urokov fotografii;
prakticheskoe rukovodstvo. 11-oe izd., perer. Moskva, Gos. izd-vo
"Iskusstvo," 1955 480 p. [Microfilm] (MLRA 8:2)
(Photography)

NIKULIN, VI.

Study photographic chemistry ("Photographic chemistry" by K.E.
Markhilevich and V.A. Iashtold-Govorke. Reviewed by VI. Nikulin).
Sov.foto 17 no.6:67-68 J1 '57. (MLRA 10:8)
(Photographic chemistry)
(Markhilevich, K.E.)
(Iashtold-Govorke, V.A.)

MIKULIN, VI.

Photography clubs for beginners. Nov. foto 17 no. 7:22 J1 '52.

(MLRA 10:9)

(Photography)

MIKULIN, Vl.

Where to begin. Sov. foto 17 no.9:24-25 8 '57.
(Photography)

(MIRA 10:9)

MIKULIN, Viktor Petrovich; ZHIBRETSKAYA, N.N., red.; MALEK, Z.N., tekhn.red.

[Amateur manual on photographic developers] Fotoretsepturnyi
spravochnik dlia fotolubitelei. Moskva, Gos. izd-vo "Iskusstvo,"
1958. 223 p. (MIRA 12:1)
(Photography--Developing and developers)

MIKULIN, Ye.I., kand.tekhn.nauk

Structure and design of laminar heat exchangers. [Trudy] MTU
no.75:62-77 '58. (MIRA 11:10)
(Heat exchangers)

66164

SOV/184-59-4-9/18

5(1) 5.1230

AUTHOR: Mikulin, Ye.I., Candidate of Technical Sciences

TITLE: A Study of Lamellar Heat-Exchangers

PERIODICAL: Khimicheskoye mashinostroyeniye, 1959, Nr 4, pp 25 - 28 (USSR)

ABSTRACT:

The article summarizes the results of studies carried out in MVTU imeni Bauman. Among the lamellar heat-exchangers one of the most effective is an apparatus with a two-sided arrangement of ribs. It has a number of rectangular sections with lamellas soldered to the separation walls, forming a ribbed surface. The sections can have a cylindrical form and can be arranged co-axially. Hot and cold air counterflow in adjacent sections. From the view point of the heat exchange intensity the ribs, made of rods or of wire with small diameter are the best. Ribs of rectangular section, bent as shown on Figure 1 are also effective. Ribs in form of a flat lamella do not secure a good turbulency of the flow. The author criticizes Norris, London, Spofford and Keys [Refs 2 - 4] for their empirical approach to the problem and for little attention paid by them to the choice of geometrical parameters (length and thickness) of ribs and to the influence of the coefficient of heat-conductivity of the rib material. The author investigates the process of the heat-exchange

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A Study of Lamellar Heat-Exchangers

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through the ribbed surface. Figure 2 represents the distribution of temperatures along two adjacent ribs, where t_o = temperature of separating wall between sections, t_1 and t_2 = temperatures of direct and return flow (all in $^{\circ}\text{C}$). The author derives formulae for the amount of heat conducted by a thin rib, conducted from one section to another through the rib base, and conducted by one pair of ribs (q_p). Knowing the value of q_p the necessary number of ribs and consequently the size of the apparatus can be determined. With an increased length of the rib the number of sections decreases, which permits to improve the design and to reduce production costs. However, a considerable increase of the rib length has the disadvantage of greater thermal resistance. The author arrives at an optimum rib length by considering the heat exchange process by all ribs in a cross-section of the apparatus. The maximum length of a rib is L_{\max}

$\leq \frac{0.4}{m}$. However, the actual length of a rib of a little over L_{\max} permits to reduce the number of sections without a substantial decrease in the amount of heat conducted by all ribs in the cross-section of the apparatus (Q_1). To evaluate the tolerable deviation from L_{\max} , the influence of the thickness of the rib (δ) and its heat conductivity (λ) is investigated (Figure 3). As Figure 3 shows, Q_1 is little influenced by δ and λ , when the ribs are short. At great values of $\lambda \delta$ the actual length of a rib can

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A Study of Lamellar Heat-Exchangers

considerably exceed L_{\max} without a noticeable decrease of Q_1 . At small values of λ the choice of the rib length must be done very carefully by formula (15) or diagram 3. A rational choice of the rib length permits to determine the minimum number of sections possible without substantial reduction of Q_1 . Parallel with the theoretical studies of it a lamellar heat exchanger was tested (G.N. Shumilova, Engineer, participated). The heat-exchanger (Figure 4) is a three-sectional unit with a central section for direct flow and two side sections for return flow. Each section contained 40 ribbed copper lamellas 0.5 mm thick. Schematic of arrangement is shown on Figure 5, there is: 1 - heat-exchanger, 2 - electric furnace, 3 - water rheostat, 4 - diaphragm, 5 - differential manometers, T - thermocouples. The air is supplied by a piston compressor and after passing the central section of the unit enters the electric furnace, wherefrom it is ejected through the side sections into the atmosphere. The air consumption varied from 75 to 165 mm³/h. The maximum pressure in the central section was 3.3 atm and in the side-sections 2.2 atm. Temperature of the incoming air varied from 7.5 to 15.0°C. The temperature after passing the electric furnace was about 100°C. The difference of temperatures between direct and return flow was within 10 - 16°C, depending on the amount of the passing air. The experimental arrangement used did not permit to determine the heat emission coefficient for direct and return flow separately, there

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A Study of Lamellar Heat-Exchangers

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fore the heat transfer coefficient was determined in relation to the cross-section of the ribs. On diagram 6 the straight line represents the heat transfer capacity of the ribs K_p in kcal/m² hour °C computed by Equation (8). The points representing the experimental values of K_p , show a fairly close coincidence of computed and experimental values. Compared with the heat exchangers of tube-pipe and coil-pipe types, the lamellar type heat exchanger has better weight and size characteristics and a smaller resistance. However the complexity of manufacture still interferes with their wide application. There are: 3 graphs, 3 diagrams, 1 table and 4 references, 1 of which is Soviet and 3 English (American).

✓

Card 4/4

- GERSH, Semen Yakovlevich, prof. [deceased]; GEL'PERIN, N.I., prof.,
retsentsent; MIKULIN, Ye.I., red.: Prinimal uchastiye GERSH,
V.S., inzh., red. LARIONOV, G., tekhn.red.

[Low temperature refrigeration] Glubokoe okhlazhdenie. Izd.3..
dop. i perer. Moskva, Gos.energ.isd-vo. Pt.2. [Design of
machinery and apparatus, thermal calculations, description of
units for low temperature refrigeration] Konstruktsii mashin
i apparatov, teplovye raschety, opisanie ustanovok glubokogo
okhlazhdeniia. 1960. 495 p. (MIRA 13:12)
(Refrigeration and refrigerating machinery)

88627

S/170/61/004/002/005/018
B019/B06011.9100
AUTHOR:

Mikulin, Ye. I.

TITLE:

Temperature Field of Two Solid Bodies Separated by a Gap

PERIODICAL:

Inzhenerno-fizicheskiy zhurnal, 1961, Vol. 4, No. 2,
pp. 52-57

TEXT: A study has been made of the unsteady temperature field of two coaxial cylinders of length L separated by an air gap. The lateral surface and one base are adiabatically insulated, and heating (cooling) is done from the other base ($x=0$). In an arbitrary cross section of these cylinders the temperature is regarded as constant, so that the task is a homogeneous problem. During heating and cooling of the system a heat exchange takes place between the two cylinders through the gap. This heat exchange is taken into account in the heat conduction equation of this system by the introduction of a heat source. The intensity of this source is determined from the heat conductivity β of the gap, which in the present case is determined from the steady heat exchange conditions. The heat

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Temperature Field of Two Solid Bodies
Separated by a Gap

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B019/B060

conduction equations for this system read:

$$\partial t_1 / \partial \tau = a_1 \partial^2 t_1 / \partial x^2 + A_1 (t_2 - t_1) \quad (1)$$

$$\partial t_2 / \partial \tau = a_2 \partial^2 t_2 / \partial x^2 - A_2 (t_2 - t_1) \quad (2),$$

where $A_1 = \beta / c_1 \gamma_1 h_1$, and $A_2 = \beta / c_2 \gamma_2 h_2$. The initial and boundary conditions are: for $\tau = 0$, $t_1 = t_2 = t_0$ (3)

$$\text{for } x = 0, \quad t_1 = t_2 = t_s \quad (4)$$

$$\text{for } x = L, \quad \left(\frac{\partial t_1}{\partial x} \right)_{x=L} = \left(\frac{\partial t_2}{\partial x} \right)_{x=L} = 0 \quad (5).$$

The following relation was obtained by elimination of t_2 :

$$\partial^4 t_1 / \partial x^4 - \left(\frac{a_1 + a_2}{a_1 a_2} \right) \partial^3 t_1 / \partial x^2 \partial \tau - \left(\frac{A_1 a_2 + A_2 a_1}{a_1 a_2} \right) \partial^2 t_1 / \partial x^2 + \partial^2 t_1 / a_1 a_2 \partial^2 \tau$$

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Temperature Field of Two Solid Bodies
Separated by a Gap

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B019/B060

$$+ \frac{A_1 + A_2}{a_1 a_2} \frac{\partial t_1}{\partial \tau} = 0 \quad (6).$$
 Here, $t_1 = f(x)\varphi(\tau) = f(x)e^{-m\tau}$ is a particular solution. By substituting in (6) and a slight transformation one obtains:
$$d^4 f(x)/dx^4 + bd^2 f(x)/dx^2 + pf(x) = 0 \quad (8).$$
 The characteristic equation:
$$r^4 + br^2 + p = 0$$
 corresponds to differential equation (8). Four cases can be considered here: (1) two roots are real, two are imaginary, (2) all four roots are imaginary, (3) all four roots are real, and (4) all four roots are equal. All four possibilities are discussed and solutions are obtained for t_1 and t_2 . Finally, the solutions for conjugate-complex roots are dealt with. There is 1 Soviet reference.

ASSOCIATION: Vyssheye tekhnicheskoye uchilishche im. Bauman, g. Moskva
(Higher Technical School imeni Bauman, Moscow)

SUBMITTED: May 23, 1960

Card 3/3

MARFENINA, I.V., kand.tekhn.nauk; MIKULIN, Ye.I., kand.tekhn.nauk

Analysis of a regenerative gas refrigeration cycle. Khim.mash.
no.2:7-13 Mr '62. (MIRA 15:3)
(Low temperature research)

MIKULIN, Ye.I.; MARFENINA, I.V.

Thermodynamic diagrams for neon and some of its properties.
Inzh.-fiz. zhur. no.12:111-117 D '63. (MIRA 17:2)

1. Moskovskoye vyssheye tekhnicheskoye uchilishche imeni Baumana.

MIKULIN, YE. I.

I. 44300-65 EWT(d)/EWT(1)/EWT(m)/EWP(w)/EPP(g)/EEC(k)-2/EP'(n)-2/EWA(d)/EPR/T/EWP(t)/
EAG(c)/EAG(l) P. 4/P. 4/P. 4 IJP(c)/RP' ID/AL/FW
ACCESSION NR AM5003777 BOOK EXPLANATION S/ 66
65
841

Arkharov, Aleksey Mikhaylovich; Butkevich, Konstantin Stefanovich; Golovintsov,

Andrey Grigor'yevich; Kulakov, Viktor Mikhaylovich; Marfenina, Irina

Vasil'yevna; Mikulin, Yevgen'y Ivanovich; Stolper, Mikhail Borisovich

Cryogenic engineering (Tekhnika nizkikh temperatur), Moscow, Izd-vo "Energiya",
1966, 447 p. illus., biblio., fold. diagrs. (in pocket). Errata slip in-
serted. 5,500 copies printed.

TOPIC TAGS: ²¹ cryogenics; ²⁷ cryogenic equipment, liquid hydrogen, liquid helium ²⁷

PURPOSE AND COVERAGE: The book examines the theoretical principles of low-
temperature engineering, describes the design of deep-cold equipment, and
presents the methodology for calculating them with data required for design.
Special attention is devoted to the new problems of low-temperature engineering
which have not yet been covered sufficiently in the literature. They include:
the development of low temperatures, classification and analysis of deep-cold
cycles for obtaining liquid and gaseous products and cooling at a temperature
level below 20 K. The methodology of designing effective heat exchange and
separating equipment and piston and turbine machines is presented. The book
contains a large amount of handbook and factual material. It can be a useful

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aid for researchers and engineers and as a guide for students and graduate students specialising in cryogenic engineering.

TABLE OF CONTENTS [abridged]:

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Ch. III. Deep-cold cycles and their analysis --	58
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SUBMITTED: 15Oct64

SUB CODE: GP, TD

NO REF 30V: 209

OTHER: 113

Card 2/2 CL

ACC NR: AP7000967

(A)

SOURCE CODE: UR/0416/66/000/012/0079/0082

AUTHOR: Englin, B. (Doctor of technical sciences; Engineer; Lieutenant colonel);
Mikulín, Yu. (Candidate of technical sciences; Engineer; Captain of 2d rank)

ORG: none

TITLE: Starting diesel engines at low temperatures

SOURCE: Tyl 1 snabzheniye sovetskikh vooruzhennykh sil, no. 12, 1966, 79-82

TOPIC TAGS: diesel engine, ^{diesel fuel, liquid fuel,} engine starter system, low temperature lubricant, lubricant additive/Kholod D 40 ~~starting fluid~~ ^{liquid fuel}

ABSTRACT: Investigations carried out by scientific research institutes and analyses of foreign and domestic experimental data have revealed that one of the most effective means of facilitating the starting of diesel engines at low temperatures consists in the use of readily flammable starting fluids. Experiments made with the Kholod-D-40 starting fluid on various types of diesel engines were conducted under actual operating conditions in the far north after an exposure to temperatures down to minus 38°C for 10—100 hr. The components of Kholod-D-40 starting fluid and its use are discussed. The use of standard lubricants (at up to minus 20—25°C) and thickened lubricants with a 15—20% additive of diesel oil (at up to minus 35—40°C) is discussed, and the starting procedure is described. Tabulated values show the average maximum abrasions of cylinder bushings for various diesel engines and lubri-

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UDC: none

ACC NR: AP7000967

cants. The described starting method was proved best over a 3-year period of operation in the far north. Orig. art. has: 1 table. [GE]

SUB CODE: 21, 11/ SUBM DATE: none/

Card 2/2

26522

S/065/61/000/008/007/009

E194/E135

11.0170

AUTHORS: Losikov, B.V., Fat'yanov, A.D., Mikulin, Yu.V.,
Aleksandrova, L.A., Koznov, G.G., and Berezina, R.M.

TITLE: The use of residual fuels in gas turbines

PERIODICAL: Khimiya i tekhnologiya topliv i masel,
1961, No. 8, pp. 47-53

TEXT: The mechanism of deposit formation and corrosion in gas turbines using residual fuels containing vanadium and sodium is discussed. Possible methods of avoiding the vanadium corrosion include injection into the combustion chamber of substances which react with vanadium pentoxide and the more convenient use of fuel additives. The object of the present work was to check, on typical materials used in gas turbines, the corrosivity of corrosion products of high-sulphur marine heavy-fuel grade $\Phi\text{C}-5$ (Fs-5) and to study the use of additives to reduce this corrosion. The tests were made on a model combustion chamber which had previously been used for testing high sulphur distillate fuels but for the present work fuel heating equipment was provided. The test samples were made up as plates of 40 x 25 x 4 mm which were

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placed in the path of flow of the combustion products. Corrosion was assessed by change in weight after the specimen had been exposed in the chamber and cleaned by electrolytic treatment in a solution of sodium carbonate and sodium hydroxide. It was found that corrosion is most intense in the first 2 - 3 hours and that it has reached a practically constant value at the end of 5 hours so that there was no need to continue the tests longer than this. The reference fuel was grade Φ -12 (F-12) containing 130 parts per million sodium and no vanadium. The vanadium content of the other fuels ranged from 16 to 35 parts per million vanadium. The first tests were made with nickel base alloys Φ A-435 (EI-435) and Φ A-602 (EI-602) which show little vanadium corrosion at temperatures below 650-700 °C; however, at higher temperatures the rate of corrosion rises rapidly. Alloys based on iron such as grade Φ A-481 (EI-481) are much more affected by vanadium than are the nickel alloys, particularly at the higher temperatures. The higher the vanadium content of the fuel, the lower the temperature at which the rising inflection of the corrosion curve occurs. At a gas temperature of 800-850 °C appreciable corrosion is observed with 10 ppm vanadium in the fuel, whereas at 630-680 °C corrosion

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increases appreciably only with fuel of 30 ppm vanadium or more. In general, at temperatures of 650-850 °C the combustion products of fuels containing 14 - 35 parts per million vanadium increased the rate of corrosion by a factor of 4 to 15, depending on the alloy used. The effect of additives was checked on fuel grade F-12 (no vanadium) and Fs-5 containing 27 parts per million vanadium and 9 parts per million sodium using alloys EI-602, EI-481 and EI-417. The additives used were organic compounds of magnesium that are readily soluble in heavy fuels but differing in the structure of the organic radical. The use of additive to the extent of 0.2% weight of fuel greatly reduced vanadium corrosion. It was shown that some organic magnesium compounds are much more effective than others. It is concluded that with 30 parts per million vanadium in the fuel the use of 0.016% magnesium in the form of soluble organic compounds practically completely prevents vanadium corrosion. Tests were also made with injection into the combustion chamber of ammonia to the extent of 0.5% by weight of the fuel. This also practically prevents vanadium corrosion of the nickel and iron alloys within the temperature range tested.

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Use of ammonia at the rate of 0.2% weight is less effective. The best results were obtained when the ammonia was injected before the combustion zone. A further advantage of using soluble compounds as against the suspensions sometimes used is that erosive wear of the turbine blades is reduced. A mechanism of action of the additives is suggested.

There are 6 figures, 1 table and 14 references: 5 English and 11 Soviet (including 3 translations from Proceedings of World Petroleum Congress VII). The four most recent English language references read as follows:

- Ref.1: A. Garner, P. Green, R. Harper, F. Pegg. J. Inst. of Petrol., Vol.39, 278, 1953.
Ref.2: Proc. Inst. Mech. Eng., Vol.168, No.3, 1954.
Ref.4: P. Lloid, R. Probert. Proc. Inst. Mech. Eng., Vol.163, 206, 1950.
Ref.9: H. King, H. Nutt. Trans. ASME, Vol.78, No.1, 185-196, 1956.

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TITLE:

An investigation of the influence of combustion products of sulphurous distillate fuels on the constructional materials of gas turbines

PERIODICAL:

Energomashinostroyeniye, no.2, 1962, 34-36

TEXT:

The use of gas turbines is to be considerably extended and they will be required to run on fuel containing about 1% sulphur. It was accordingly of importance to study the influence of fuel combustion products on the corrosion of turbine parts. In principle both high and low temperature corrosion might occur, but the former is the more probable in gas turbines. The tests were made on a small laboratory combustion chamber with a fuel consumption of about 1 kg per hour in which were placed specimens made of sheet material, discs and runner blades of gas turbines. The tests were made with diesel fuel containing from 0.2 to 1.6% sulphur,

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taking as a standard the low-sulphur diesel fuel grade AC (DS) to standard ГОСТ 4749-49 (GOST 4749-49) containing 0.2% sulphur, which is currently used in gas turbines. Corrosion was assessed by weighing the specimens. Before weighing they were cleaned electrolytically in a molten bath of 40% Na₂CO₃ and 60% NaOH at a temperature of 500-550°C with a current density of 0.25 A/cm². In the first series of tests measurements were made of the corrosion resistance of alloys exposed to corrosion products of sulphurous fuels. The exposures were made in steps of ten hours using steel based on iron (grade ЭИ 481 (EI 481)) and on nickel (grade ЭИ 437Б (EI 437B)) as compared with an ordinary steel grade 10 exposed for 50 hours at a temperature of 650°C. The nickel alloy was practically uncorroded at this temperature; there was appreciable corrosion of the iron-based alloy; and the steel grade 10 was considerably corroded. With steels based on iron it is found that increasing the sulphur content of the fuel may reduce the rate of corrosion. This was confirmed on another iron-based steel, grade 2Х13 (2 Kh 13). Curves of corrosion loss as functions of temperature

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